CHEMISTRY

BOOKS - FULL MARKS CHEMISTRY (TAMIL ENGLISH)

p-BLOCK ELEMENTS -I

Text Book Evaluation Choose The Correct Answer

1. An aqueous solution of borax is

A. basic

B. acidic

C. basic

D. amphoteric

Answer: C

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2. Boric acid is an acid because its molecule

A. contains replaceable H^+ ion

B. gives up a proton

C. combines with proton to form water molecule

D. accepts OH^- from water, releasing proton.

Answer: D

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3. Which among the following is not a borane ?

A. B_2H_6

B. B_3H_6

C. B_4H_{10}

D. None of these

Answer: A

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4. Which of the following metals has the largets abundance in the earth's crust?

A. Aluminium

B. calcium

C. Magnesium

D. sodium

Answer: A

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5. In diborane, the number of electrons that accounts for banana bonds is

A. six

B. two

C. four

D. three

Answer: C

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6. The element that does not show catenation among the following p-block elements is

A. carbon

B. silicon

C. lead

D. germanium

Answer: C

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7. Carbon atoms in fullerene with formula C_{60} have

A. sp^3 hybridised

B. sp hybridised

C. sp^2 hybridised

D. partialy sp^2 and partially sp^3 hybridised

Answer: C

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8. Oxidation state of carbon in its hydrides

A. $+4$

B. -4

C. $+3$

D. $+2$

Answer: A

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9. The basic strutural unit of silicates is

A. $(SiO_3)^{2-}$

B. $(SiO_4)^{2-}$

C. $(SiO)^{-}$

D. $(SiO_4)^{2-}$

Answer: D

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10. The repeating unit in silicone is

A. SiO_2

B. $-\overset{\overset{R}{|}}{\underset{\underset{R}{|}}{Si}}-O-$

C. $R-O-\overset{\overset{|}{}}{\underset{\underset{R}{|}}{Si}}-O$

D. $-\overset{\overset{|}{}}{\underset{\underset{R}{|}}{Si}}-O-O-R$

Answer: B

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11. Whilch of these is not a monomer for a high molecular mass silicone polymer?

A. Me_3SiCl

B. $PhSiCl_3$

C. $MeSiCl_3$

D. Me_2SiCl_2

Answer: A

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12. Which of the following is not sp^2 hybridised ?

A. Graphite

B. graphene

C. Fullerene

D. dry ice

Answer: A

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13. The geometry at which carbon atom in diamond are bonded to each other is

A. Tetrhedral

B. hexagonal

C. Octahederal

D. None of these

Answer: A

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14. Which of the following statements is not correct?

A. Beryl is a cyclic silicate

B. Mg_2SiO_4 is an orthosilicate

C. SiO_4^{4-} is the basic structural unit of silicates

D. Feldspar is not aluminosilicate

Answer: D

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15. AlF_3 is soluble in HF only in the presence of KF. It is due to the formation of

A. $K_3[AlF_3H_3]$

B. $K_3[AlF_6]$

C. AlH_3

D. $K[AlF_3H]$

Answer: B

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16. Match items in column -I with the items of column - II and assign the correct code.

Column-I	Column-II
A Borazole	1. $B(OH)_3$
B Boric acid	2. $B_3N_3H_6$
C Quartz	3. $Na_2[B_4O_5(OH)_4]\,8H_2O$
D Borax	4. SiO_2

	A	B	C	D
(a)	2	1	4	3
(b)	1	2	4	3
(c)	1	2	4	3
(d)	None of these			

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17. Duralumin is an alloy of

A. Cu, Mn

B. Cu, Al, Mg

C. Al, Mn

D. Al, Cu, Mn, Mg

Answer: D

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18. Thermodynamically the most stable form of carbon is

A. Diamond

B. graphite

C. Coal

D. None of these

Answer: B

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19. The compound that is used in nuclear reactors as protective shields and control rods is

A. Meal borides

B. metal oxides

C. Metal carbonates

D. metal carbide

Answer: A

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20. The stability of $+1$ oxidation state increases in the sequence

A. AlltGaltInltTI

B. TIltInltGaltAl

C. InltTIltGaltAl

D. GaltInltAlltTI

Answer: A

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Text Book Evaluation Answer The Following Questions

1. Write the short note on anamolous properties of the first element of p - block.

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2. (a) Describe briefly allotropism in p - block elements with specific reference to carbon.

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3. Boron does not react directly with hydrogen. Suggest one method to prepare diborane from BF_3.

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4. Give the uses of Borax.

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5. What is catenation? Describe briefly the catenation property of carbon.

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6. Write a note on Fisher tropsch synthesis.

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7. Give the structure of CO and CO_2

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8. Give the uses of silicones.

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9. $AlCl_3$ behaves like a lewis acid. Substantiate this statement.

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10. Describe the structure of diborane .

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11. Write a short note on hydroboration.

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12. Give one example for each of the following

(i) icosogens (ii) tetragen

(iii) pnictogen (iv) chalcogen

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13. Write a note on metallic nature of p-block elements.

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14. Complete the following reactions:

a. $B(OH)_3 + NH_3 \rightarrow$ (b)

$Na_2B_4O_7 + H_2SO_4 + H_2O \rightarrow$

c. $B_2H_6 + 2NaOH + 2H_2O \rightarrow$ (d)

$B_2H_6 + CH_3OH \rightarrow$

(e) $BF_3 + 9H_2O$ (f) $HCOOH + H_2SO_4 \rightarrow$

(g) $SiCl_4 + NH_3 \rightarrow$ (h) $SiCl_4 + C_2H_5OH \rightarrow$

(i) $B + NaOH \rightarrow$ (j) $H_2B_4O_7 \xrightarrow{\text{Red hot}}$

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15. How will you identify borate radical ?

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16. Write a note on zeolites.

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17. How will you convert boric acid to boron nitride ?

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18. A hydride of 2^{nd} period alkali metal (A) on reaction with compound of Boron (B) to give a reducing agent (c) I dentify A, B and C.

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19. A double salt which contains fourth period alkali metal (A) on heating at 500 K gives (B). Aqueous solution of (B) gives white precipitate with $BaCl_2$ and gives a red colour compound with alizarin. Identify A and B.

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20. CO is a reducing agent. Justify with an example.

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Evaluate Yourself

1. Why group 18 elements are called inert gases ? Write the general electronic configuration of group 18 elements.

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Additional Questions Choose The Correct Answer

1. More common oxidation state for halogens is .....

A. $+1$

B. $+2$

C. -1

D. -2

Answer: C

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2. Electronic configuration of noble gases is .....

A. ns^2

B. ns^2np^5

C. ns^1np^6

D. ns^2np^6

Answer: D

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3. Noble gases are chemically inert. This is due to .....

A. unstable electronic configuration

B. stable electronic configuration

C. only filled p-orbital

D. only filled s-orbital

Answer: B

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4. Consider the following statements,

(i) The first member of the group -13, boron is a metalloid while others are reactive metals.

(ii) The oxides of boron and silicon are similar in their acidic nature.

(iii)Both boron and silicon form metallic hydrides.

Which of the above statement (s) is/are not correct?

A. i only

B. ii only

C. ii and iii

D. iii onlyh

Answer: D

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5. Which element has a greater tendency to form a chain of bonds with itself?

A. Boron

B. Silicon

C. Tin

D. Carbon

Answer: D

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6. Which one of the following is the strongest oxidising agent?

A. Fluorine

B. Chlorine

C. Bromine

D. Iodine

Answer: A

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7. Some elements exist in more than one crystalline or molecular forms in the same physical state is called.....

A. isomerism

B. allotropism

C. isomorphism

D. isoelectronics

Answer: B

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8. How many allotropes possible for boron?

A. 1

B. 4

C. 6

D. 7

Answer: C

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9. Important ore of boron is .....

A. bauxite

B. borosilicate

C. borax

D. β- tetragonal

Answer: C

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10. Less reactive elements in boron family is ..... .

A. Boron

B. Aluminium

C. Gallium

D. Thallium

Answer: B

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11. More toxic element in boron family is ..... .

A. Boron

B. Aluminium

C. Galium

D. Thallium

Answer: D

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12. Boron does not react directly with ..... .

A. Oxygen

B. Hydrogen

C. Acids

D. Alkali

Answer: B

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13. Borontrifluoride reacts with sodium hydride at 450 K gives.....

A. diborane

B. tetraborane

C. pentaborane

D. decaborane

Answer: A

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14. $2B + N_2 \xrightarrow{\Delta} A$ Identify A

A. BN_3

B. B_3N

C. $(BN)_3$

D. BN

Answer: D

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15. Boron reacts with fused sodium hydroxide to forms.....

A. Borax

B. Boric acid

C. Sodium borate

D. Sodium tetraborate

Answer: C

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16. Which isotope is used as moderator in nuclear reactors?

A. $^{10}B_5$

B. $^{12}C_6$

C. $^{4}He_2$

D. $^{40}Ca_{20}$

Answer: A

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17. Borax is ..... In nature.

A. basic

B. acidic

C. amphoteric

D. chemically inert

Answer: A

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18. Which compound is used as flux in metallurgy ?

A. Boron nitride

B. Boron oxide

C. Boron fluoride

D. Borax

Answer: D

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19. The trialkylborate on reaction with sodiumhydride in tetrahydrofuran to form..... .

A. $NaBH_4$

B. $Na\left[BH(OR)_3\right]$

C. $Na\left[B(OR)_3\right]$

D. $Na\left[BH(OR)_3\right]^-$

Answer: B

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20. Compounds used as an eye lotion .....?

A. H_3BO_3

B. HBO_2

C. $H_2B_4O_7$

D. B_2O_3

Answer: A

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21. Which one of the following is highly reactive compound?

A. B_2O_3

B. H_3BO_3

C. HBO_2

D. B_2H_6

Answer: D

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22. $B_2H_6 + 6CH_3OH \rightarrow A$. Identify A

A. B_2O_3

B. CH_3OB

C. CH_3OH

D. $B(OCH_3)_3$

Answer: D

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23. Which one of the following is called as inorganic benzene?

A. B_2H_6

B. BN

C. $H_2B_4O_7$

D. $B_3N_3H_6$

Answer: D

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24. Compound contains two centred two elecrtron bond (2c-2e) is .....

A. B_6H_{11}

B. B_5H_9

C. B_2H_6

D. $B_{10}H_{11}$

Answer: C

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25. Diborane reacts with excess ammonia at high temperature to give..... .

A. Boron nitride

B. Boron oxide

C. Borazole

D. Diborane diammonate

Answer: C

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26. Consider the following statements,

(i) Diborane contains two centre two electron bond.

(ii) In diborane, the boron has sp^3 hybridised.

(iii)Diborane has two terminal B-H bond and four B-H-B bonds.

Which of the above statements (s) is/are correct.

A. iand iii

B. ii and iii

C. ionly

D. I and ii

Answer: D

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27. Compound used for propellant i s .....

A. BN

B. $H_2B_4O_7$

C. B_2H_6

D. Borax

Answer: C

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28. Which one of the following is double salt?

A. Potash alum

B. Potassium sulphate

C. Aluminium Sulphate

D. Ammonium sulphate

Answer: A

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29. Consider the following statements,

(i) Alums are more soluble in hot water than in cold water.

(ii) Alums are more soluble in cold water than in hot

water.

(iii) Potash alum is employed as styptic agent to arrest bleeding.

Which of the above statement (s) is /are not correct?

A. I only

B. ii only

C. ii only

D. I,ii and ii

Answer: B

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30. The structure of graphite is

A. planner

B. hexagonal

C. Octahederal

D. bucky balls

Answer: B

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31. Which one of the following is used a lubricant?

A. Graphite

B. Diamond

C. Fullerene

D. Graphene

Answer: A

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32. Which one of the following carbon alotrope is very hard?

A. Graphite

B. Diamond

C. Fullerene

D. Graphene

Answer: A::D

33. Recently discovered allotropes of carbon is ..... .

A. Graphite

B. Diamond

C. Carbon nanotubes

D. Fullerences

Answer: C

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34. CO and N_2 mixture is .....

A. natural gas

B. producer gas

C. water gas

D. LPG

Answer: B

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35. Syn gas is .....

A. $CO + N_2$

B. $CO + H_2$

C. $CO_2 + H_2$

D. $CO_2 + N_2$

Answer: B

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36. Ethene is mixed with carbon monoxide and hydrogen gas to produce propanal is known as.....

A. Oxo process

B. Mc Afee proces

C. Wacker process

D. Haber process

Answer: A

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37. ..... is a good reducing agent.

A. contains replaceable H^+ ion

B. CO_2

C. $\left[Cr(CO)_6\right]$

D. $\left[Ni(CO)_4\right]$

Answer: A

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38. Critical temperature of CO_2 is .....

A. $-31^\circ C$

B. $-13^\circ C$

C. $31^\circ C$

D. $13^\circ C$

Answer: C

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39. Which one of the following compound is important for photosynthesis?

A. CO

B. CO_2

C. $COCl_2$

D. C

Answer: B

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40. General empirical formula of silicone is ..... .

A. (R_2SiO)

B. $(RSiO)$

C. (R_2CO)

D. $(RSiH)$

Answer: A

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41. Consider the following statements

(i) All Silicones are hydrophilic in nature.

(ii) Silicones are thermal and electrical insulators.

(iii) Chemically silicones are highly reactive.

Which of the above statement (s) is /are not correct?

A. I and ii

B. I and iii

C. ii and iii

D. ii

Answer: B

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42. Silicate contains silicon and oxygen in ..... units.

A. $[SiO_4]^{4-}$

B. $[SiO_4]$

C. $[SiO_4]^{2-}$

D. $[SiO_4]^{-}$

Answer: A

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43. Ortho silicates are also called as .....

A. Into silicates

B. Soro silicates

C. Neso silicates

D. Cyclic silicates

Answer: C

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44. Example of Ring silicate is .....

A. Olivine

B. Beryl

C. Spodumene

D. Asbestos

Answer: B

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45. Pick out the three dimensional silicates?

A. Talk

B. Mica

C. Quartz

D. Asbestos

Answer: C

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46. Compound used to remove the permanent hardness of water is ..... .

A. Zeolite

B. Feldspar

C. Talc

D. Mica

Answer: A

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Additional Questions Fill In The Blanks

1. ..... Is the general electronic configuration of tetragen elements.

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2. Boron and silicon form ..... Hydrides.

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3. ..... Is most reactive element among the halogens.

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4. Most stable oxidation state of aluminium is ..... .

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5. General formula of metal boride is ..... .

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6. Boron has the capacity of absorb..... .

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7. ..... Is used as a rocket fuel igniter.

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8. ..... Is essential for the cell walls of plants.

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9. ..... is a chemical formula of borax.

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10. ..... is used for the identification of coloured metal ions.

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11. .....is a colourless transparent crystal.

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12. Boric acids has a ..... Structure.

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13. Boric acid consists of ..... unit.

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14. On heating magnesium boride with HCl a mixture of volatile. ..... Are obtained.

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15. Diborane reacts with methylalcohol to give.....

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16. Diborane has ..... B-H bonds.

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17. In diborane, the boron is ..... Hybridised.

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18. ..... Is inorganic benzene.

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19. Boron trifluoride has a ..... geometry.

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20. Anhydrous aluminium chloride is a..... Substance.

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21. With excess of NaOH aluminium chloride produces.

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22. ..... is used for the manufacture of petrol by cracking the mineral oils.

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23. ..... Is used for water proofing and textiles.

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24. ..... is the most stable alotropic form of carbon at normal temperature and pressure.

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25. ..... is allotropic form of carbon has aromatic character.

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26. Graphene has ..... Lattice.

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27. Carbonyl chloride is a ..... gas.

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28. Equimolar mixture of hydrogen and carbonmonoxide is called as.....

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29. Producer gas is a mixture of ..... And ..... .

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30. Aqueous solution of carbon dioxide forms ..... .

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31. ..... Are high temperature polymers.

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32. The viscosity of silicon oil remains.

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33. ..... Are used as insulating material.

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34. In beryl, each aluminium is surrounded by..... .

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35. ..... Is carcinogenic silicates.

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36. Three dimensional by replacing..... units by ..... .

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37. ..... Crystal to act as a molecular sieve.

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38. Borax is a sodium salt of ..... .

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Additional Questions Match The Following

1. Match the following

(i) Tetragens	(a) Oxygen
(ii) Icosagens	(b) Carbon

(iii)Chalcogens (c)Nitrogen

(iv)Pnictogens (d)Boron

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2. Match the following

(i)Borax $(a)Na_2B_4O_7$

(ii)Prismatic form $(b)Na_2B_4O_7.5H_2O$

(iii)Jeweller Borax $(c)Na_2B_4O_7.10H_2O$

(iv)Borax glass $(d)\left[B_4O_5(OH)_4\right]^{2-}$

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3. Match the following

(i) Boron	(a) Optical
(ii) Borax	(a) Neutron absorber
(iii) Boric acid	(c) Welding torches
(iv) Diborane	(d) Eye lotion

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4. Match the following

(i) Graphite	(a) Honeycomb crystal
(ii) Diamond	(a) Aromatic character
(iii) Fullerene	(c) Lubricant
(iv) Graphene	(d) Very hard

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5. Match the following

$(i)\,Orthosilicate$	$(a)\,\text{Thortveitite}$
$(ii)\,Pyrosilicate$	$(b)\,Beryl$
$(iii)\,Cyclicsilicate$	$(c)\,Quartz$
$(iv)\,\text{Tecto silicate}$	$(x)\,Phenacite$

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Additional Questions Assertion And Reason

1. Assertion (A): Noble gases are least reactivity.

Reason (R):Noble gases have completely filled s and p-orbital and attain stable electronic configuration.

A. A and R are correct and R explains A.

B. A and R are correct and R not explains A.

C. A is correct R is wrong.

D. A is wrong but R is correct

Answer: A

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2. Assertion (A): Both boron and silicon form covalent hydrides.

Reason(R):Boron does not shows diagonal relationship with silicon of group 14.

A. A and R are correct and R explains A.

B. A and R are correct and R not explains A.

C. A is correct R is wrong.

D. A is wrong but R is correct

Answer: C

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3. Assertion (A): Fluorine is most reactive element among the halogens.

Reason(R):Fluorine has minimum bond dissociation energy.

A. (a) A and R are correct and R explains A.

B. (b) A and R are correct and R not explains A.

C. (c) A is correct but R is wrong.

D. (d) A is wrong but R is correct.

Answer: A

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4. Assertion A: Boron combines with halogen to form trihalides at high temperatures.

Reason (R):Boron does not reacts directly with hydrogen.

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5. Assertion(A):Boron -10 isotopes is used as moderator in nuclear reactors.

Reason(R):Boron has the capacity to absorb neutrons.

A. (a) A and R are correct and R explains A.

B. (b) A and R are correct and R not explains A.

C. (c) A is correct but R is wrong.

D. (d) A is wrong but R is correct.

Answer: A

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6. Assertion (A): Diborane is highly reactive.

Reason(R):At high temperatures, diborane forms higher boranes.

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7. Assertion (A): BF_3 reacts with ammonia to form complex.

Reason (R):BF_3 is a electron deficient compound and accepts electrons pairs to form coordinate covalent bonds.

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8. Assertion (A): Fullerene has aromatic character.

Reason(R):Some of the fullernes have σ- bonds and delocalised π- bonds.

A. (a) A and R are correct and R explains A.

B. (b) A and R are correct and R not explains A.

C. (c) A is correct but R is wrong.

D. (d) A is wrong but R is correct.

Answer: A

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9. Assertion(A): Carbon dioxide is non flammable gas.

Reason(R):CO_2 critical temperature is $31^\circ C$ and can be readily liquefied.

A. (a) A and R are correct and R explains A.

B. (b) A and R are correct and R not explains A.

C. (c) A is correct but R is wrong.

D. (d) A is wrong but R is correct.

Answer: B

10. Assertion (A): Zeolites act as a molecular sieve.

Reason(R):Zeolite structure is pore/ channel sizes are nearly uniform.

A. (a) A and R are correct and R explains A.

B. (b) A and R are correct and R not explains A.

C. (c) A is correct but R is wrong.

D. (d) A is wrong but R is correct.

Answer: A

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11. Find the odd one out and give the reason.

A. Icosagens

B. Tetragens

C. Alkali metals

D. Chalcogens

Answer: C

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12. Find the odd one out and given the reason.

A. Al

B. B

C. O

D. Na

Answer: D

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13. Find the odd one out and given the reason.

A. diborane

B. Borax

C. Carbonmonoxide

D. Boric acid

Answer: C

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14. Find the odd one out and give the reason.

A. $B_3N_3H_6$

B. B_4H_{10}

C. B_5H_9

D. B_5H_{11}

Answer: A

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15. Find the odd one out and give the reason.

A. Potash alum

B. sodium alum

C. burnt alum

D. Ammonium alum

Answer: C

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16. Find the odd one out and give the reason.

A. Graphite

B. Borax

C. Fullerene

D. Diamond

Answer: B

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17. Find the odd one out and given the reason.

A. B

B. Ga

C. In

D. Na

Answer: D

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Additional Questions Correct Pair

1. Find out the correct pair.

A. Ortho silicate- Soro silicate

B. Pyro silicate-Neso silicate

C. Chain silicate-Pyroxenes

D. Double chain silicate-Ring silicate

Answer: C

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2. Find out the correct pair.

A. Graphene-1.54Å

B. Diamon -1.40Å

C. Fullerne-1.38Å

D. Graphite-1.40Å

Answer: D

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3. Find out the correct pair.

A. Diborane-Welding torches

B. $AlCl_3$-Eye lotion

C. Borax-pigments

D. boric acid-optical

Answer: A

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4. Find out the correct pair.

A. Inert gas $-ns^2np^1$

B. Chalcogens-ns^2np^2

C. Pnictogens $-ns^2np^3$

D. Tetragens$-ns^2np^4$

Answer: C

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5. Find out the correct pair.

A. Icosagens-oxygen

B. Tetragen-carbon

C. chalcogen-Fluorine

D. Halogen -Boron

Answer: B

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Additional Questions Incorrect Pair

1. Find out the incorrect pair.

A. Tetragens-ns^2np^2

B. Icosagens$-ns^2np^1$

C. Chalcogens-ns^2np^4

D. Halogens$-ns^2np^6$

Answer: D

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2. Find out the incorrect pair.

A. Boron is $BF_3 - +3$

B. Carbon in $CO_2 - +4$

C. Nitrogen in $N_2O_5 - +5$

D. Fluorine in $OF_2 - +4$

Answer: D

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3. Find out the incorrect pair.

A. Nitrogen -Tetragens

B. Oxygen-Chalcogens

C. Tin -Tetragens

D. Gallium-Icosagens

Answer: A

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4. Find out the incorrect pair.

A. Boron-Moderator

B. Borax-Eye lotion

C. Boric acid-Antiseptic

D. Diborane-Propellant

Answer: B

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5. Find out the incorrect pair.

A. McAfee process $-AlCl_3$

B. Burnt -K_2SO_4. $Al_2(SO_4)_3$

C. Oxo process -Propanal

D. Fisher tropsch Synthesis -HCOOH

Answer: D

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6. Find out the incorrect pair.

A. Soro silicate -Thortveitite

B. Ring silicate-Beryl

C. Sheet silicate-Asbestos

D. Tecto silicate -Quartz

Answer: A

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7. Find out the incorrect pair.

A. Pyroxenes-Phenacite

B. Amphiboles-Asbestos

C. Phyllo silicate-Mica

D. Tecto Silicate- Quartz

Answer:

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Additional Questions 2 Marks Questions

1. What are Wade's Rule?

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2. Why-1 oxidation state is more common in halogens.

Explain.

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3. Why boron has non-metallic character?

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4. Define inert pair effect.

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5. Mention the allotropes of boron.

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6. List out the allotropes of tin.

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7. Mention the allotropes of phosphorous?

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8. Given the two allotropes of sulphur.

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9. Why boron compounds are covalent in nature?

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10. Define Borax is basic in nature.

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11. Explain action of heat on borax.

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12. What happen when borax treated with ammonium chloride?

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13. What happen when boric acids reacts with sodium hydroxide?

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14. Identify A and B from the following reaction,

(i) $H_3BO_3 + NH_3 \xrightarrow{800-1200K} A + 3H_2O$

(ii) $4H_3BO_3 + 3C_2H_5OH \xrightarrow{conc.\,H_2SO_4} B + 3H_2O$

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15. Explain the structure of Boric acid.

Structure of boric acid.

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16. Explain the action of air on diborane.

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17. How will you convert diborane into sodium borohydride?

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18. Mention the uses of boron trifluoride.

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19. What is McAfee process?

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20. What happen when potash alum is treated with ammonium hydroxide?

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21. What is producer gas? How will you prepare producer gas?

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22. What is synthetic gas?

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23. What is phosgene?

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24. How will you prepare propanal by oxoprocess?

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25. What is water gas equilibrium ?

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26. What are the uses of silicon tetra chloride ?

Watch Video Solution

27. What are silicones ?

Watch Video Solution

28. ..... Are high temperature polymers.

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29. Why silicones are water repellent?

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Additional Questions 3 Mark Questions

1. Write a notes on ionisation enthalpy in p-block elements?

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2. Give the uses of boron.

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3. How will be prepare from colemanite?

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4. Explain the extraction of boric acid from

(i) Borax (ii) Colemanite

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5. Explain the action of heat on boric acid .

Watch Video Solution

6. How will you convert, boric acid into (i) Boron trifluoride (ii) Borax

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7. What are the uses of boric acid ?

Watch Video Solution

8. Explain the preparation of diborane.

Watch Video Solution

9. What happen when diborane heated at various temperature?

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10. Explain the reaction between diborane and ammonia?

Watch Video Solution

11. Why borontrifluoride is act as lewis acid? Explain the react between BF_3 and ammonia?

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12. How does $AlCl_3$ reacts with following reagents?

(i) H_2O (ii) NH_4OH (iii) NaOH

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13. Give the uses of aluminium chloride.

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14. How will you prepare potash alum?

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15. Mention the uses of the potash alum.

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16. What is burnt alum ?

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17. What are all the conditions are necessary form catenation?

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18. Give any three methods to prepare carbon monoxide.

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19. Mention the uses the carbon monoxide.

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20. Explain the methods to prepare carbon dioxide.

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21. Give the uses of carbon dioxide.

Watch Video Solution

22. Explain the preparation of silicon tetrachloride.

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23. Complete the following reaction:

(i) $SiCl_4 + H_2O \rightarrow ?$

(ii) $SiCl_4 + C_2H_5OH \rightarrow ?$

(iii) $SiCl_4 + NH_3 \xrightarrow[\text{ether}]{330K} ?$

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24. Explain the types of silicones.

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25. Mention the properties of silicones.

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26. What are silicates and mention the types of silicates?

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Additional Questions 5 Marks Qeustions

1. An element (A) extracted from kernite. A reacts with nitrogen at high temperature gives B. A reacts with

alkali to form C. Find out A, B and C. Give the chemical equations.

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2. (b) Compound A is used in the manufacture of optical. A on heating gives B. B further heating to form C. A reacts with hydrochloric acid to give D. Identify A, B,C and D. Explain the reaction.

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3. Complete the reaction,

i. $H_3BO_3 \xrightarrow{373K} A + H_2O$

ii. $A \xrightarrow{413K} B + H_2O$

iii. $B \xrightarrow{\text{Red hot}} C + H_2O$

A. fig

B.

C.

D.

Answer:

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4. Sodium borohydride reacts with iodine in the presence of diglyme to give A. A heated at 388 K give

B. A heated at 373 K in sealed tube to form C. A further heated at red hot condition to give element D. Find out A,B, C and D. Give the reactions.

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5. How does carbonmonoxide reacts with following reagents,

(i) Oxygen

(ii) Chlorine

(iii) Iron(III) Oxide

(iv)Hydrogen

(v)Ethene

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6. Explain the preparation of silicones.

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7. Discuss the ortho and pyro silicates.

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8. Explain (i) Cyclic silicates, (ii) Ino silicates.

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9. Write a notes on

(i) Sheet silicates (ii) Three dimensional silicate

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10. Explain Boron neutron capture therapy.

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